VISIT…

LANZAROTE

Caliente.COM

Milestones In Human Longevity

For most of human history, the average expected lifespan was a mere 30 - 40 years. In the times of our hunter-gatherer ancestors, infant mortality was high, disease was untreatable, and injuries suffered while hunting or fighting frequently led to death.

Eventually, humans mastered agriculture and irrigation, which allowed the formation of cities and government. And yet from the times of Ancient Egypt all the way through the Middle Ages, the average human lifespan still hovered at a mere 38 years of age — thanks to rampant disease, contaminated water, malnutrition and violent warfare.

Then, beginning in the 1840's, everything began to change. The average human lifespan started going up by about 3 months every year, and has not slowed down since. Over the course of 150 years, the life expectancy for Americans has nearly doubled from 40 years to 79 years.

How did we come to live in a period of such amazing longevity? The following is a timeline of some of the major advances – both medical and sociological – that contributed to our increasing quantity and quality of years.

May 14, 1796

Dr. Edward Jenner prevented a young English boy from getting smallpox with his smallpox vaccine, the first vaccine ever developed.

1800 Average Lifespan: 38 years

March 30, 1842

American doctor **Crawford W. Long** first used ether as an anesthetic for surgery.

Mid 1800s

The biggest public works projects in the country at this time involved developing **modern sewage systems** to separate clean water from dirty water. Typhoid and cholera were transmitted by contaminated water, and these were both major causes of death.

1864

Louis Pasteur invented the process of **pasteurization**, treating milk and wine to prevent bacterial contamination.

Late 1800s

Improved Nutrition & Housing
The leading killer in the 19th century was tuberculosis, also known as consumption. TB is a bacterial infection, and it's linked to both overcrowding and malnutrition. Agricultural yields became much higher as technology progressed in the late 1800's, making food supplies more stable and giving people better resistance to bacterial infection.

1870

Louis Pasteur and Robert Koch developed the **Germ Theory of Disease** was crucial in developing the concept of antisepsis, a sterile surgical environment which kept patients from getting deadly infections.

1895

German physicist,**William Roentgen** discovered X-rays, giving birth to radiology and allowing scientists to see inside the human body without surgery.

1897

Ronald Ross, a British officer serving in India, identified that malaria was transmitted by mosquitos, leading to a successful treatment for malaria that is still in use today.

1900

In 1900, horses outnumbered cars by 21 million to 8,000 and less than 5% of women gave birth in hospitals.

1900 Average Lifespan: 47 years

1908

At the Boonton Reservoir on the Rockaway River (near Jersey City, NJ) the **first continuous use of chlorine to disinfect water** took place. Very shortly thereafter, the process was repeated all over the country and cholera was largely eradicated.

1922

Toronto, Canada physician **Dr. Frederick Banting** develops insulin to treat diabetes. This innovation has turned diabetes into a manageable condition rather than a terminal disease.

1925

Randomized, controlled clinical trials using a placebo group as the control became the gold standard of medical research.

1928

Scottish biologist, **Alexander Fleming**, discovered the world's first antibiotic, penicillin. He won the Nobel Prize for this in 1945 and his discovery helped stopped countless diseases such as tuberculosis.

1929

Old-age pension laws began to be passed.

1950

John Hopps invents the first external cardiac pacemaker.

1950 Average Lifespan: 68 years

1953

Crick & Watson discover the double helix structure of DNA.

1954

First organ transplant performed. The patient, Richard Herrick, was dying of kidney disease. Physicians in Boston, MA successfully transplanted a kidney from his identical twin brother, Ronald.

1955

Jonas Salk develops the first polio vaccine.

1964

The Surgeon General issues report on "Smoking & Health" identifying smoking as a cause of cancer.

1966

Two new laws were passed — the Highway Safety Act and the National Traffic and Motor Vehicle Safety Act — which made both vehicles and US highways much safer. By 1970, there was a 35% decline in the number of motor-vehicle deaths per capita.

1967

Dr. Christiaan Barnard performs the first human heart transplant.

1970

President Nixon signs into law the Occupational Safety & Health Act to protect US workers, leading to 40% less fatal workplace injuries by 1980.

1975

Captopril, the first orally-active ACE inhibitor was developed. This helped significantly reduce death by coronary heart disease in this country.

1978

In vitro fertilization developed. The first "test-tube baby" is born in Great Britain.

1980

The World Health Organization announces that smallpox has been eradicated worldwide

1982

Dr. William DeVries implants the first artificial heart (known as the Jarvik-7) into a human patient.

1984

MRI's are approved for use by the FDA.

1990

Laparoscopic surgery invented, which allows doctors to perform surgery using a device with a tiny camera on the end. This means the incision can be as small as a keyhole, and the camera can be snaked to the damaged area with less pain, hemorrhaging, and scarring.

1996

Dolly the sheep becomes the first mammal cloned from an adult cell.

1998

Stem cells can be programmed to become any type of cell in the human body. Progress has already been made using stem cells to cure diseases and repair damaged tissue, most commonly used for heart repair and eye disease.

Targeted cancer therapy developed.
While chemotherapy and radiation had been effective at killing cancer cells, they also kill healthy cells. But new cancer drugs specifically target cancel cells and kill them while blocking tumor growth.

2000 Average Lifespan: 76 years

2003

The Human Genome Project — an international research effort to sequence and map all human genes (known as the genome) — completes their final draft. The HGP gave us the ability, for the first time, to read nature's complete genetic blueprint for building a human being, and will soon lead to curing many genetic diseases.

2010

The first complete **face transplant** was performed in Spain in 2010, on a man who had severely damaged his face in an accident. He was successfully given a new nose, lips, cheeks, and teeth during a 24 hour surgery.

2013

Harvard professor Dr. David Sinclair successfully reverses aging of cells in mice.

2014

Bionic limbs are becoming more unbelievable every day. On the most advanced end, there are now robotic arms that can be controlled by a computer chip implanted in the brain. However simpler bionic arms are becoming commonplace, including one made for just $350 on a 3-D printer at MIT and given to 6-year old Alex Pring in 2014.

2015 Average Lifespan: 79 years

The question now at hand is this:
Is there a limit to how long humans can expect to live?

Some scientists insist that lifespan can't possibly keep increasing at the same rate it has for the past 100 years…that there must be a natural "cap" on how long humans can live.

However, as James Vaupel — director of the Max Planck Institute for Demographic Research — points out:

"Mortality experts have repeatedly asserted that life expectancy is close to an ultimate ceiling; these experts have repeatedly been proven wrong."

At Live Cell Research, we share this opinion. As any student of recent history can see, the brilliance of medical advances is only increasing with every passing year.

And we will continue to be at the forefront of those advances, working to increase both the number of years people live – and the quality of those years.

Our goal is one that scientists once thought impossible: To "cure aging."

And now, it is no longer a question of if this will be achieved.

The only question is: **When?**